The influence of social circumstances on 'Risky' patterns of alcohol consumption among mothers with pre-school aged children in England.

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Abstract:

Background

Social factors have been linked to patterns of alcohol use among women. However, conflicting evidence on the ways in which socio-economic circumstances are linked to women's alcohol use impedes our understanding. Interest in women's alcohol use has moved up the policy agenda. Nevertheless, existing research fails to attend to differences among groups of women according to their social circumstances, including whether or not they are mothers.

Objectives

This study aims to enhance our understanding of 'risky' patterns of alcohol use among mothers in the UK during very early motherhood.

Methods

Secondary analyses of 2000/1 data from the Millennium Cohort Study (MCS) was undertaken. Using a broad outcome measure of 'risky' alcohol use, patterns of consumption among a sub-set of mothers recruited in England (n = 7048) were explored according to a number of social and domestic variables.

Using logistic regression, mutually adjusted analyses that included adjustment for age were undertaken. Odds ratios were calculated for the likelihood of ‘risky’ drinking according to mothers’ social circumstances and level of disadvantage.

Results

‘Risky’ alcohol use was more likely with increased levels of disadvantage: disadvantaged childhood circumstances, lower levels of educational attainment, lower household income, younger age at first birth, lone parenthood.

Conclusions

Social gradients were evident for ‘risky’ alcohol use among mothers with 9 month old babies in England who took part in the MCS. These findings emphasise the importance of exploring patterns of alcohol use among sub-groups of the population that are currently under-represented in the research literature.

Background

Harmful alcohol use has a major impact on both individuals themselves and society at large. Alcohol misuse has high individual and societal costs and it is estimated that £21 billion each year is spent tackling alcohol related problems, at a cost to the NHS of approximately £3.5 billion per annum (Health and Social Care Information Centre, 2015). The United Kingdom Alcohol Treatment Trial (UKATT) in England found females to be more costly than males in terms of the treatment they received as a result of alcohol related problems (Coyle, 1997).

The majority of the population have drinking (and non-drinking) habits that do not present risks for their own, or others' wellbeing (ONS, 2013a). Nevertheless, women with children are underrepresented in the research literature to date with respect to majority 'low risk' alcohol use and minority 'high risk' use. This is despite the fact that most women become mothers (ONS, 2013b) and mothers have a central role in the socialisation of children and the domestic organisation of the family including how alcohol is introduced and integrated into family life (Valentine et al., 2007, Smith and Foxcroft, 2009).

Existing research suggests that a woman's status as a mother is an important factor influencing perceptions of appropriate use of alcohol consumption. Lyons and Willott (2008) described how women had to negotiate their alcohol use and were often criticized for drinking during pregnancy, while breastfeeding and throughout motherhood more generally. They suggest that femininity equates to motherhood and heavy drinking among women, especially mothers, is viewed as "deviant" and breaking "traditional codes of femininity" (Lyons and Willott, 2008). In a qualitative study carried out in the UK of 18-22 year old female students, there was a strong

belief that parenthood necessitated reduced alcohol consumption and failure to do so was considered irresponsible (Rudolfsdottir and Morgan, 2009). Thus, alcohol use is woven into the construction of the 'good' responsible mother, with 'bad' irresponsible mothers distinguished by their drinking habits.

Patterns of 'risky' alcohol use among women have been identified in the research literature with disadvantaged socio-economic (household income, educational attainment, employment status) and domestic circumstances (marital status, timing of entering motherhood) associated with increased incidence of problematic alcohol use (Bloomfield et al., 2006, Giskes et al., 2011, Kokko et al., 2009, Kuntsche et al., 2006). Whether these socio-economic patterns persist when women become mothers and to what extent domestic circumstances are influential warrants further investigation, particularly since children's subsequent drinking patterns are influenced by the drinking behaviours of their parents (Little et al., 2009, Vermeulen-Smit et al., 2012).

We use the Millennium Cohort Study (MCS) a UK study of mothers with young children with self-reported information on frequency and quantity (units) of alcohol use. Self-reports are known to underestimate consumption when compared with the sale of taxed alcohol (Goddard. E., 2001) but provide a reliable means of comparing drinking within population groups. For example, among mothers there is no evidence of socio-economic differentials in the under-reporting of alcohol use. Our analysis is constrained by the data collected on mothers' alcohol use collected both for mothers who drank less and more frequently and between sweeps of the study. However, as the largest contemporary study of UK mothers, it provides unique insight into the patterns of alcohol use in a key population sub-group.

Methods:

Participants

The Millennium Cohort Study (MCS) is a longitudinal study following the progress of children born in the UK 2000/01. The cohort was recruited when the child was 9 months old (response rate 72%; *n* = 18522 families across the UK, *n* = 11,533 in England), with a further pre-school follow-up at 3 years (response rate 58% of original sample; *n* = 15590 families across the UK, *n* = 10050 in England), together with subsequent school-age waves of the study (Dex and Joshi, 2005, Plewis and Ketende, 2007).

We used a sub-sample of mothers recruited in England, who took part in waves 1 and 2 of the MCS (*n* = 7048) to ensure that the recommendations to which we refer were applicable to the sample from which patterns of alcohol use were drawn. Natural mothers from a white ethnic background (Office for National Statistics, 2003) who were resident in the house in which the cohort baby lived were included. Preliminary analysis pointed to marked ethnic differences in alcohol use but the small numbers of mothers from non-white groups prevented ethnic-group specific analyses.

The analysis presented here focuses on cross-sectional data gathered on 'risky' alcohol use (>3 units/day or >21 units/week) in wave 1. The same measures of frequency of alcohol use were used for all mothers in wave 1. However, different measures of quantity were used in wave 1 depending on how frequently mothers drank.

Outcome measures

Mothers were asked how frequently they drank alcohol and how many units of alcohol they consumed on average on each drinking occasion (among mothers who

drank less than once per week), or during each week (among mothers who drank at least once per week). Responses to the questions on frequency and daily/weekly quantity were used to generate a broad measure of 'risky' alcohol use. The categories of 'risky' alcohol use relate to daily and weekly drinking recommendations specified by the Department of Health in 1995 and 2016 respectively.

Current recommendations for women are 14 units of alcohol per week (DOH, 2016). In order to account for those women who drank less frequently, previously cited recommendations of 2-3 units per day were used (DOH, 1995). In the UK 'risky' alcohol use can be defined in terms of the recommendations:

1) Women are at "increasing risk" if they drink above the recommendations (>2-3 units/day) "regularly" (Anderson, 2008).

2) Women are at "higher risk" if they drink more than twice the recommendations (>6 units/day) "regularly" (Anderson, 2008).

3) Women are at an "increased risk" if they drink more than 21 units of alcohol weekly irrespective of the number of days over which it is consumed (DOH, 2016).

"Regularly" means drinking every day or most days of the week (Department of Health, 2008).

Due to the small numbers of women considered 'high risk', in this analysis 'risky' alcohol use included all women drinking more than 3 units per day or more than 21 units per week, n = 1124 (14.4%).

We investigated the association between social circumstances and the odds of mothers engaging in 'risky' drinking behaviours (>3 units/day or >21 units/week) in wave 1 when their child was 9 months old.

Socio-economic factors

A number of socio-economic measures were identified in the research literature as important predictors of women's alcohol use (see table 1). For women, the distinction between socio-economic circumstances and domestic circumstances is somewhat blurred, since important dimensions of domestic circumstances, like age at first birth and cohabitation status, are also markers of social dis/advantage (Joshi et al., 2004).

Ethics

This study was approved by the University of York's Department of Health Sciences Research Governance Committee, York, UK.

Table 1: Social profile of the eligible sample of mothers (*n* = 7048) and sub-sample of 'risky' drinkers (*n* = 1124, 14.4%*)

Social profile of the sample		Sample of eligible mothers				Sub-sample of 'Risky' drinkers			
		Wave 1		Wave 2		Wave 1		Wave 2	
		N	%*	N	%*	N	%*	N	%*
Childhood circumstances	**Managerial/ prof**			1914	29.2			209	10.0
	Intermediate			1438	21.1			202	13.0
	Economically inactive/ lowest			2951	40.0			572	17.6
	Unknown			745	9.8			141	17.1
Age left education	**≥22**	722	11.5			39	5.0		
	19-21	837	13.0			73	8.1		
	17-18	2026	30.0			260	11.6		
	≤16	3463	45.5			752	20.4		
Employment status	**Economically active**	3696	54.6			514	12.5		
	Economically inactive	3352	45.4			610	16.6		
Household income	**£31,200+**	1640	27.0			107	6.0		
	£20,800-31,200	1587	24.2			216	12.2		
	£10,400-20,800	2113	29.2			394	17.6		
	£0-10,400	1291	15.5			338	26.1		
	Unknown	299	4.1			48	15.2		
	Missing	118				21			
Age at first live birth	**30+**	1981	31.0			121	5.8		
	25-29	2109	31.7			299	12.9		
	20-24	1685	22.1			357	19.3		
	14-19	1238	15.3			340	27.4		
	Missing	35				7			
Cohabitation status	**Married**	4131	62.8			439	9.6		
	Cohabiting	1968	26.3			421	20.2		
	Lone parent	917	10.9			255	27.3		
	Missing	32				9			
Number of children	**3+**	1438	19.8			225	13.4		
	2	2629	37.9			402	14.0		
	1	2981	42.3			497	15.2		
Level of disadvantage	**0**	1386	22.5			99	7.0		
	1	1949	30.5			220	10.2		
	2	1510	22.1			270	16.2		
	3	939	12.6			200	20.1		
	4	476	5.9			121	25.9		
	5	297	4.8			111	27.6		
	6	159	1.8			50	33.7		
	Missing	232				53	7.0		

* Weighting for complex sampling were applied

"0" No disadvantage (no childhood disadvantage (father highest occupational class), no educational disadvantage (left education aged ≥22), no employment disadvantage (economically active), no income disadvantage (£31,200+), no age disadvantage (first live birth aged ≥30), no relationship disadvantage (married) "**1//2/3/4/5/6"** number of levels of disadvantage from either (childhood disadvantage (father economically inactive/lowest occupational class), educational disadvantage (left education aged ≤16), employment disadvantage (economically inactive), income disadvantage (£0-10,400), age disadvantage (first live birth aged 14-19), relationship disadvantage (lone parent).

Measures of social circumstances were drawn from wave 1 of the MCS other than childhood circumstances (father's occupational status when cohort mother was aged

14) drawn from wave 2 since data was not included on this variable at wave 1. As a retrospective measure, answers to the question on this measure of childhood socio-economic position would not have changed had the question been asked in wave 1.

Father's occupational class when the mothers were aged 14 classified according to NS-SEC classification schema (3 groups) was used to measure childhood socio-economic circumstances. Due to small numbers, not working and routine/ manual occupations were grouped together in the analysis. An unknown category was included for those women who did not know what job their father did. The age at which women left full-time education was used in the analysis to account for the different types of educational qualifications that individuals can attain. The age groups represented traditional educational milestones, for example, completing secondary school, further education, degree level and advanced education over and above degree level. Employment was split into two categories, economically active and economically inactive, since approximately half of the women in the sample were not working when the cohort baby was nine months old, and the aim was to determine the effect of current economic activity on current alcohol use. Equivalised household income that takes into account household composition was employed as a measure of socio-economic circumstances. The income bands in this analysis relate to the original banded values in the MCS and go up incrementally by £10,400. The unknown category was created to account for women who did not know their household income.

The age at which women first became mothers was an important variable in this analysis since it has been established as a pathway linking poor childhood circumstances and subsequent adult disadvantage (Joshi et al., 2004). Women were grouped into 3 categories of relationship; lone parents, cohabiting parents and married

parents. The partners of the married or cohabiting women were either biological fathers, or were considered parents/ carers to the cohort child. The number of siblings in the household including the cohort child was examined. The analysis does not account for the effects on mothers of children that are not resident in the household, nor does it take into account children that may have been born to the natural mother but have since been adopted or children that may have died.

As a broad indicator of multiple disadvantage, a simple additive index was constructed of the total number of disadvantaged circumstances experienced by mothers from 0 to 6. The reference category (0) for this analysis refers to mothers advantaged on all of the 6 dimensions. The index categories (1-6) for this analysis related to mothers who reported any number (1-6) of the most disadvantaged dimension (see table 2).

Table 2: Descriptors for the levels of disadvantage

	No disadvantage (0)	**Disadvantage (1-6)**
Childhood Circumstances	father highest occupational class	father economically inactive/lowest occupational class
Age of leaving education	left education aged ≥22	left education aged ≤16
Employment status	economically active	economically inactive
Household income	household income £31,200+	household income £0-10,400
Age at first live birth	first live birth aged ≥30	first live birth aged 14-19
Cohabitation status	married	lone parent

Analysis

STATA version 10.1 was used to carry out the statistical analysis. The original sample disproportionately represented disadvantaged socio-economic groups. This was taken into account when carrying out all the analysis by using a variable created by the MCS team to correct the weight assigned to each response. A similar response rate was achieved in England by areas considered advantaged (73%) and disadvantaged (70%). Similarly, the field response rate was 86% and 82% for advantaged and disadvantaged respectively (Plewis and Ketende, 2007).

The socio-economic variables and the variable representing women's level of disadvantage were the independent variables. The relationship between each of the variables included in the analysis was tested using Pearson's correlation coefficient. Correlations ranged from 0.03-0.68, as a result no variables were excluded from the analyses. The dependent binary variable (the outcome of interest) was 'risky' drinking (>3 units/day or >21 units/week). Using logistic regression, bivariate analysis of multiple disadvantage and mutually adjusted analyses of social circumstances that

included adjustment of age were carried out using data from wave 1 (age of leaving education, employment status, household income, age at first live birth, cohabitation status and number of children in household) and wave 2 (childhood circumstances). In addition, in view of the dearth of research on the social patterning of alcohol use among mothers, an inclusive approach to testing for interactions was taken and significant interaction terms were included in the analyses (see table 3). Ordinal logistic regression was discounted since it assumes there is proportional disparity between any two levels within each dependant variable and the independent outcome variable. Similarly, multinomial regression was inappropriate since the outcome variable in question only has two levels. Odds ratios were calculated for the likelihood of 'risky' drinking according to socio-economic status and level of disadvantage. Post-estimation adjusted Wald F tests were carried out for each independent variable to determine whether each constituent level was statistically different (See table 3).

Results:

Table 3 provides a summary of the results. Both social circumstances (R^2 = .09, F (27, 171) = 13.51, *p*=0.000) and level of disadvantage (R^2 = .07, F (9, 189) = 29.20, *p*=0.000) significantly explained 9% and 7% of the variance in 'risky' drinking among mothers with pre-school aged children respectively. The likelihood of 'Risky' alcohol use (>3 units/day, or >21 units/week) was greater among mothers experiencing the most disadvantaged circumstances when compared to those experiencing the most advantaged circumstances across all of the social variables (OR: 3.98, C.I: 2.57-6.14, *p*=0.000). Mothers who left education aged 16 and under were more likely to report 'risky' alcohol use compared to individuals who left education aged 22 and over (OR: 30.33, C.I: 6.56-140.27, *p*=0.000). The increased likelihood of 'risky' drinking with lower levels of educational attainment was

attenuated with increasing numbers of children in the household and was exacerbated among mothers who had their first child aged 14-19 and who left education aged 21 or under. 'Risky' drinking was more likely among mothers residing in households with the lowest incomes (£0-10,400) compared with those in the highest income households (£31,200+) (OR: 1.80, C.I: 1.35-2.41, *p*=0.000). Mothers who gave birth aged 14-19 years had greater odds of 'risky' drinking in comparison to mothers who gave birth aged 30+ years (OR: 27.82, C.I: 6.99-110.68, *p*=0.000). The odds of 'risky' drinking varied according to marital status and were increased among lone (OR: 3.85, C.I: 1.23-12.06, *p*=0.021) and cohabiting mothers (OR: 2.14, C.I: 1.24-3.69, *p*=0.007) when compared to those who were married. In comparison to households with 3 children, the odds of 'risky' alcohol use was greater among household with one (OR: 5.94, C.I: 1.89-18.61, *p*=0.002) or two (OR: 2.80, C.I: 1.48-5.30, *p*=0.002) children. The odds of 'risky' alcohol use was lower among mothers who were economically inactive in comparison to mothers who were economically active however, this was not statistically significant (OR: 0.88, C.I: 0.76-1.03, *p*=0.117).

Table 3: Mutually adjusted odds ratios and 95% confidence intervals for 'risky' drinking (>3 units/day or >21 units/week) according to social circumstances and level of disadvantage.

	Bivariate analyses			Mutually adjusted analysis (*n* = 6865)		
	OR	**C.I (95%)**	***p*-value**	**OR**	**C.I (95%)**	***p*-value**
Childhood circumstances (*n* = 7046)						
Highest	1.00			1.00		
Intermediate	1.18	0.97-1.45	0.100	1.28	0.91-1.80	0.156
Lowest/ Economically inactive	1.62	1.37-1.91	0.000	2.10	1.15-3.85	0.016
Unknown	1.49	1.14-1.93	0.003	2.61	1.05-6.51	0.039
	F (6, 192) = 36.26 *p*.0.000					
Age of leaving education (*n* = 7046)						
22 and over	1.00			1.00		
19-21	1.43	0.95-2.16	0.088	2.78	1.53-5.07	0.001
17-18	1.97	1.30-2.98	0.001	7.91	2.74-22.83	0.000
16 and under	3.42	2.27-5.16	0.000	30.33	6.56-140.27	0.000
	F (6, 192) = 43.42 *p*.0.000					
Employment status (*n* = 7046)						
Economically active	1.00			1.00		
Economically inactive	1.11	0.97-1.27	0.122	0.88	0.76-1.03	0.117
	F (4, 194) = 50.12 *p*.0.000					
Household income (*n* = 6928)						
£31,200+	1.00			1.00		
£20,800-31,200	1.92	1.48-2.49	0.000	1.55	1.20-1.99	0.001
£10,400-20,800	2.45	1.87-3.23	0.000	1.64	1.25-2.15	0.000
£0-10,400	3.25	2.45-4.32	0.000	1.80	1.35-2.41	0.000
Unknown	2.37	1.62-3.46	0.000	1.75	1.19-2.56	0.004
	F (7, 191) = 34.95 *p*.0.000					
Age at first live birth (*n* = 7011)						
30+	1.00			1.00		
25-29	2.02	1.60-2.55	0.000	3.98	2.43-6.50	0.000
20-24	2.54	1.92-3.37	0.000	8.95	3.50-22.93	0.000
14-19	3.61	2.71-4.83	0.000	27.82	6.99-110.68	0.000
	F (6, 192) = 40.26 *p*.0.000					
Cohabitation status (*n* = 7014)						
Married	1.00			1.00		
Cohabiting	1.77	1.49-2.11	0.000	2.14	1.24-3.69	0.007
Lone parent	2.34	1.89-2.90	0.000	3.85	1.23-12.06	0.021
	F (5, 193) = 49.56 *p*.0.000					
Number of children in household (*n* = 7046)						
3+	1.00			1.00		
2	0.87	0.71-1.06	0.177	2.80	1.48-5.30	0.002
1	0.77	0.62-0.95	0.015	5.94	1.89-18.61	0.002
	F (5, 193) = 39.82 *p*.0.000					
Interactions						
Education/Age 1st birth				0.87	0.78-0.98	0.020
Education/No. children				0.86	0.75-1.00	0.044
				R^2 = .09, F (27, 171) = 13.51 *p*.0.000		
Level of disadvantage (*n* = 6827)						
0	1.00					
1	1.43	1.11-1.85	0.006			
2	2.28	1.73-2.98	0.000			
3	2.51	1.88-2.36	0.000			
4	3.17	2.29-4.41	0.000			
5	3.13	2.29-4.28	0.000			
6	3.98	2.57-6.14	0.000			
	R^2 = .07, F (9, 189) = 29.20 *p*.0.000					

*Weighting for complex sampling were applied

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Strengths and limitations:

The MCS relies on self-reported levels of alcohol consumption. The measurement of alcohol in terms of units and subjective measures undoubtedly limits the reliability of individual's self-reported alcohol use. Studies have shown that people do not understand how many units are in different alcoholic beverages (Office for National Statistics, 2010), or what the recommendations are (Office for National Statistics, 2010). Indeed, of the 75% of individuals who had heard of daily limits, only 44% and 52% knew the correct daily limits for men and women respectively (Office for National Statistics, 2010). Furthermore, of these individuals, only 12% of men and 14% of women kept track of the number of units they consumed (Office for National Statistics, 2010).

Mothers represent a group who may be inclined to report conservative estimates of alcohol consumption. Therefore, it is likely that mothers who are problematic drinkers, and/or whom have disassociated themselves from societal institutions and associated organisations, will be under-represented. Nevertheless, self-reported measures of alcohol consumption are the only option for large scale population surveys (NHS Information Centre, 2011).

Our research is constrained by the information gathered in the MCS and a number of limitations become evident. Firstly, questions were not consistent between waves. For example, in wave 1 data on both the frequency and quantity of alcohol use was gathered but only information on the frequency of alcohol use was collected in wave 2, thus preventing us from examining 'risky' drinking patterns when the cohort child was aged 3. Limitations are also evident with regards to the social measures. For example, due to the small numbers of women in employment, occupation was confined to two categories for analysis purposes: 'economically active' and

'economically inactive' thus limiting the sensitivity of the analysis. Educational attainment was only acknowledged in the form of formally recognised qualifications in the MCS, as opposed to 'on the job' training or vocational qualifications. In addition, the age at which women left full-time education used in the analysis precluded the inclusion of years in part-time further education that may have been more applicable to this sub-group of women with children. The variable cohabitation status did not take into account relationship duration and previous circumstances.

Notwithstanding these limitations, we were able to broadly outline how mothers' social circumstances may influence patterns of 'risky' alcohol use during very early motherhood.

Discussion:

Very few of the mothers (*n* = 1124, 14.4%) who took part in the MCS engaged in 'risky' patterns of alcohol use (>3 units/day or >21 units/week). Nevertheless, 'risky' patterns of alcohol use were different according to mothers' social background, and socio-economic and domestic circumstances, suggesting that patterns of alcohol use may be influenced by wider social factors.

'Risky' alcohol use was also associated with lower levels of educational attainment as was found to be the case by Jukkala et al (2008), but in contrast to other studies that found the opposite to be true whereby higher levels of educational attainment were associated with problematic alcohol use in women (Giskes et al., 2011, Jones, 2002, Bloomfield, 2006, Tsai, 2007, Caetano, 2006). In our analyses lower household income was also found to be associated with 'risky' alcohol use, once again in agreement with Jukkala et al (2008), but in opposition to a number of previous studies (Giskes et al., 2011, Keyes and Hasin, 2008). Our quantitative analyses also point to younger age at first birth as an important predictor of 'risky' alcohol use among

mothers in support of earlier research (Kokko et al., 2009). Similarly, lone parenthood was found to be associated with 'risky' alcohol use among mothers that has been found to be the case in previous studies (Maloney et al., 2010). In addition, our analysis also showed that 'risky' alcohol use was associated with fewer children living in the household. Risky' alcohol use (>3 units/day, or >21 units/week) was less likely among mothers who experienced least disadvantage in comparison to those who experienced the most disadvantage across all of the social variables. This is inconsistent with previous research on women that found an association between problematic alcohol use and advantaged social circumstances (Humensky, 2010, Giskes et al., 2011, Baumann et al., 2007). However, the socio-economic measures used in these studies to define disadvantage were limited in comparison to our research that incorporated socio-economic and domestic measures of mothers' circumstances.

Our research points to the importance of examining 'risky' alcohol use in relation to social circumstances. Qualitative research that explores *why* patterns of 'risky' alcohol use exist among mothers of pre-school aged children according to their social circumstances is warranted. Furthermore, since motherhood is such an important turning-point in women's lives we believe that mothers should be examined separately when considering patterns of alcohol use.

Conclusion:

The results provide a unique portrayal of the ways in which social circumstances during very early motherhood may influence patterns of 'risky' alcohol use. We have been able to show social gradients in relation to 'risky' alcohol use among mothers with 9 month old babies.

References:

Anderson, P. (2008). Unpublished. In: Department of Health (2008) Safe, Sensible, Social – Consultation on further action: London: Department of Health.

Baumann, M., Spitz, E., Guillemin, F., Ravaud, J. F., Choquet, M., Falissard, B. & Chau, N. (2007). Associations of social and material deprivation with tobacco, alcohol, and psychotropic drug use, and gender: a population-based study. *International Journal of Health Geographics,* 6**,** 50.

Bloomfield, K., Grittner, U, Kramer, S, Gmel, G (2006). Social inequalities in alcohol consumption and alcohol-related problems in the study countries of the EU concerted action 'Gender, culture and alcohol problems: A multinational study. *Alcohol & Alcoholism,* 41**,** i26-i36.

Caetano, R., Ramisetty-Mikler, S, Floyd, L, R, Mcgrath, C (2006). The epidemiology of drinking among women of child-bearing age. *Alcoholism: Clinical and experimental research,* 30**,** 1023-1030.

Coyle, D., Godfrey, C., Hardman, G. & Raistrick, D. (1997). Costing Substance Misuse Services. *Addiction,* 92**,** 1007–1015.

Department of Health (1995) *Sensible drinking: Report of an inter-departmental working group.* London: Department of Health

Department of Health (2016) *Alcohol Guidelines Review: Report from the Guidelines development group to the UK Chief Medical Officers*. London: Department of Health

Department of Health (2008). Units and You. NHS. London.

Dex, S. & Joshi, H. (2005). *Children of the 21st Century: From birth to nine months,* Bristol, The Policy Press.

Giskes, K., Turrell, G., Bentley, R. & Kavanagh, A. (2011). Individual and household-level socioeconomic position is associated with harmful alcohol

consumption behaviours among adults. *Australian & New Zealand Journal of Public Health,* 35**,** 270-7.

Goddard. E. (2001). *Obtaining information about drinking through surveys of the general population*. National Statistics Methodology Series No. 24, ONS: London.

Health and Social Care Information Centre. (2015). *Statistics on alcohol, England 2015*. [Online] Available at: http://www.hscic.gov.uk/catalogue/PUB17712/alc-eng-2015-rep.pdf. [Accessed: 4th December 2015].

Humensky, J. L. (2010). Are adolescents with high socioeconomic status more likely to engage in alcohol and illicit drug use in early adulthood? *Substance Abuse Treatment, Prevention, & Policy,* 5**,** 19.

Jones, A. S. (2002). Wage and non-wage compensation among young alcoholic and heavy drinking women: A preliminary analysis. *Journal of family and economic issues,* 23**,** 3-25.

Joshi, H., Hawkes, D. & Ward, K. (2004). *Unequal Entry to Motherhood and Unequal Starts in Life: Evidence from the First Survey of the UK Millennium Cohort* London: Centre for Longitudinal Studies.

Keyes, K. M. & Hasin, D. S. (2008). Socio-economic status and problem alcohol use: the positive relationship between income and the DSM-IV alcohol abuse diagnosis. *Addiction***,** 1120-1120-1130.

Kokko, K., Pulkkinen, L. & Mesiainen, P. (2009). Timing of parenthood in relation to other life transitions and adult social functioning. *International Journal of Behavioral Development***,** 356-356-365.

Kuntsche S, Gmel G, Knibbe RA, et al. (2006) Gender and cultural differences in the association betwen family roles, social stratification, and alcohol use: A European cross-cultural analysis. Alcohol Alcohol. 41: i37-46.

Little, M., Handley, E., Leuthe, E. & Chassin, L. (2009). The impact of parenthood on alcohol consumption trajectories: Variations as a function of timing of parenthood, familial alcoholism, and gender. *Development and Psychopathology,* 21**,** 661-682.

Lyons AC and Willott SA. (2008) Alcohol Consumption, Gender Identities and Women's Changing Social Positions. sex roles 59: 694-694-712.

Maloney, E., Hutchinson, D., Burns, L. & Mattick, R. (2010). Prevalence and patterns of problematic alcohol use among Australian parents. *Australian & New Zealand Journal of Public Health,* 34**,** 495-501.

Nhs Information Centre (2011). Lifestyles Statistics. Statistics on Alcohol: England, 2011. The Health and Social Care Information Centre.

Office for National Statistics (2003). *Ethnic Group Statistics: a guide for the collection and classification of ethnicity data*. Office for National Statistics. London

Office for National Statistics (2010). *Drinking: Adult's behaviour and knowledge in 2009*. Office for National Statistics. London

Office for National Statistics (2013a). *Adult drinking habits in Great Britain, 2013*. Office for National Statistics. London

Office for National Statistics (2013b). *Childbearing for women born in different years, England and Wales 2013*. Office for National Statistics. London

Plewis, I. & Ketende, S., (Eds), (2007). *Millennium Cohort Study Technical Report on Response (2nd. Ed.)*. London: Centre for Longitudinal Studies, University of London.

Rudolfsdottir AG and Morgan P. (2009) 'Alcohol is my friend': Young middle class women discuss their relationship with alcohol. Journal of Community & Applied Social Psychology 19: 492-505.

Smith, L. & Foxcroft, D. (2009). Drinking in the UK. An exploration of trends. *Joseph Rowntree Foundation*.

Tsai, J., Floyd, L, R, Green, P, P, Boyle, C, A (2007). Patterns and average volume of alcohol use among women of childbearing age. *Maternal child health journal***,** 437-445.

Valentine, G., Holloway, S., Jayne, M. & Knell, C. (2007). Drinking places: Where people drink and why. *Joseph Rowntree Foundation*.

Vermeulen-Smit, E., Koning, I. M., Verdurmen, J. E. E., Van Der Vorst, H., Engels, R. C. M. E. & Vollebergh, W. a. M. (2012). The influence of paternal and maternal drinking patterns within two-partner families on the initiation and development of adolescent drinking. *Addictive Behaviors*, 37**,** 1248-1256.